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Tangled plastic biliary stents removed using a rendezvous method

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CASE STUDY

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ABSTRACT

Biliary stents are used to facilitate the drainage of bile into the digestive tract, most often in the palliation of malignant biliary obstruction, but also in benign conditions such as biliary fistulas or benign biliary strictures. Temporary multiple double-pigtail biliary stenting is a safe method for treating large, difficult common bile duct (CBD) stones in elderly patients; it helps reduce stone size and facilitates successful duct clearance. We report a new technique for retrieving two tangled plastic biliary stents using rendezvous endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic biliary drainage.

Key Words
Plastic biliary stent, ERCP, PTBD

Implications for Practice:

1. What is known about this subject?
Failure to remove tangled two biliary stents by retrograde cholangiopancreatography (ERCP) needs new technique.

2. What new information is offered in this report?
A new technique for retrieving two tangled plastic biliary stents using, rendezvous endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic biliary drainage.

3. What are the implications for research, policy, or practice?
Failure to remove tangled two biliary stents by retrograde cholangiopancreatography (ERCP) can be solved by using rendezvous endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic biliary drainage.

Background

Biliary stents are used to facilitate the drainage of bile into the digestive tract, most often in the palliation of malignant biliary obstruction, but also in benign conditions such as biliary fistulas or benign biliary strictures.[1] Temporary multiple double-pigtail biliary stenting is a safe method for treating large, difficult common bile duct (CBD) stones in elderly patients; it helps reduce stone size and facilitates successful duct clearance.[2] We report a new technique for retrieving two tangled plastic biliary stents using rendezvous endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic biliary drainage.

Case details

A 62-year-old man was admitted with epigastric pain and computed tomography suggested a CBD stone. It proved impossible to remove the large stone, so two double-pigtail biliary stents (Zimmon; Cook Medical, IN, USA) were

inserted via ERCP, and ursodeoxycholic acid was used to dissolve the CBD stone. We failed to remove the stents using a basket or biopsy forceps two months after the initial ERCP, because they were tangled proximally (Figure 1). After making a percutaneous transhepatic biliary tract, an 8Fr spring sheath and snare catheter (15mm) were inserted. After grasping the upper end of one stent with the snare catheter (Figure 2a,b), the lower end of the other stent was captured with endoscope forceps and the two stents were separated (Figure 2c). The stents were removed sequentially using a basket (Figure 2d,e). The remnant CBD stone was removed via the percutaneous tract (Figure 2f).

Four different techniques for biliary stent retrieval have been described: indirect traction with an inflating extraction or dilation balloon catheter; direct traction on the stent using various devices; retrieval after cannulating the stent lumen; and through-the-scope technique. We report an effective new technique for removing tangled plastic biliary stents using a rendezvous method.[3-5]

Discussion

There are reports how to remove the esophagus of a self-expandable metal stent that shrivelled up into a tangle of metal wire, and how to manage of an accessory bile duct leak following pancreaticoduodenectomy by percutaneous and endoscopic randezvous.[6,7]

However, research on how to solve tangled two biliary stents are not enough. We report an effective and safety new technique for removing tangled plastic biliary stents.

Conclusion

We report a new technique for retrieving two tangled plastic biliary stents using rendezvous endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic biliary drainage.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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None

PATIENT CONSENT

The authors, *Seon Yong Choi, Han Myun Kim, Sung Ill Jang*, declare that:

1. They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
2. All possible steps have been taken to safeguard the identity of the patient(s).
3. This submission is compliant with the requirements of local research ethics committees.

Figure 1: Endoscopic retrograde cholangiopancreatography image showing the two tangled plastic biliary stents and failure to remove the stents using a basket

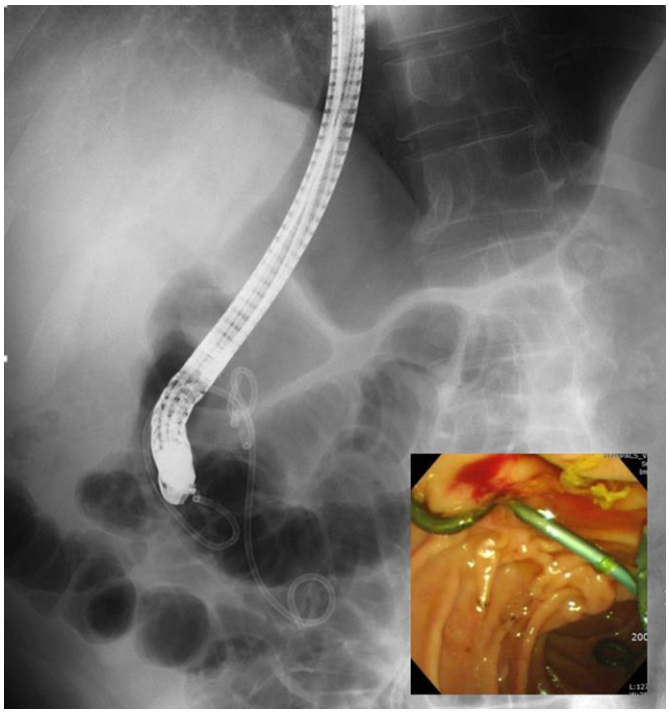

Figure 2: Radiological view of the process used to remove the tangled plastic biliary stents.; a, b After percutaneous transhepatic biliary drainage, a snare catheter was used to grasp the upper end of one stent.; c Endoscope forceps captured the lower end of the other plastic stent.; d, e The stents were separated and removed sequentially using a basket.; f Removal of the remnant common bile duct stones